UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,791	02/10/2004	Mustafa Kesal	MS307072.1/MSFTP587US	9695

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EXAMINER
MEDE, ESTEVE

ART UNIT	PAPER NUMBER
2137	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/775,791	KESAL ET AL.
	Examiner	Art Unit	
	Esteve Mede	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>10 February 2004</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-30</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>06/01/2004 & 05/26/2006</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26-27 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 27, discloses a data packet transmitted between two or more computer components. For the claimed invention to be statutory it must fall within one of the four categories of patent eligible subject matter recited in 35 U.S.C. 101, such as a process, machine manufacture or composition of matter. The claimed invention as written does not fall within the four categories of patent eligible subject matter recited in 35 U.S.C. 101.

Claim 27, discloses a data packet transmitted between two or more computer components. For the claimed invention to be statutory it must produce a concrete, useful, and tangible. The claimed invention as written in the specification on paragraph 0086 can be interpreted by one of ordinary skill in the art as software per se and therefore does not produce a concrete, useful and tangible result according to 35 U.S.C. 101.

Claims 26, discloses a system that facilitates watermarking media. For the claimed invention to be statutory it must produce a concrete, useful and tangible result. The claimed invention as written can be interpreted by one of ordinary skill in the art as software per se, as the applicant disclosed in the specification on paragraph 0086 and

0097 that the claimed invention can be implemented in "computer components" which

disclosed as software.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1-4, 10-14, 15, 24-25 and 29-30 are rejected under 35 U.S.C. 102(b) as

being anticipated by Shur (US 2001/0049788 A1).

Regarding claims 1, 15, Shur discloses a system that facilitates watermarking

media, comprising; a mark generator component that utilizes, at least in part biased,

randomized statistics to determine at least one mark value for media (paragraph 0023,

0047-0050 and); and a mark embedding component that embeds the mark value into

the media (paragraph 0029, 0031 and 0044).

Regarding claim 2,Shur discloses all the limitations of claim 2, except that the

randomly generated areas of a two-dimensional form of the media.

Tirkel discloses a two-dimensional watermark digital watermark system (see title;

see page 3, section 4.2 and 4.4). Therefore it would have been obvious to one of

ordinary skill in the art at the time of the invention to modify Moskowitz to include the

use of a two-dimensional form of media such that two-dimensional watermarking can be provided over the media.

Regarding claim 3, Shur discloses the random entry value of each area based, at least in part, on a user-unique key (paragraph 0018, and 0045-46).

Regarding claim 4, Shur discloses the two dimensional form of the media comprising a form generated by a short-time Fourier transform method applied to a time domain audio signal (paragraph 0015 and 0041).

Regarding claim 10, Shur discloses a mark detection component that detects the mark value utilizing, at least in part statistical correlation methods (para. 0055-0058).

Regarding claim 11, Shur discloses the mark detection component determines a unique user base, at least in part on the statistical correlation methods correlating above a predetermined threshold level (para. 0055-0058).

Regarding claim 12, Shur discloses the mark comprising an audio signal (see abstract; paragraph 0003).

Regarding claim 13, Shur discloses the mark generator component utilizes a range of audio signal frequencies from approximately 100HZ to approximately 3,000HZ from audio signal to determined mark values (paragraph 0012).

Regarding claim 14, Shur discloses the mark value comprising a logarithmic magnitude value (para. 055-0058).

Regarding claim 24, Shur discloses the media comprising an audio signal (para. 0003).

Regarding claim 25, Shur discloses embedding the mark value into the media further comprising: limiting the mark value embedding locations to a range of audio signal frequencies from approximately 100HZ to approximately 3,000HZ (para. 0042-0043).

Regarding claim 29-30, Shur discloses a device employing the method of claims 1 and 15 comprising at least one selected from the group consisting of a computer, server and a handheld electronic device (para 0021).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 5-7 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shur (US 2001/0049788 A1) in view of Atlas ("Modulation Spectral Transforms Application to Speech Separation and Modification, June 27, 2003).

Regarding claim 5, Shur discloses all the limitation of claim 5, except that the short-time Fourier transform method comprising a modulated complex lapped transformation method.

Atlas discloses the short-time Fourier transform method comprising a modulated complex lapped transformation method (page 5), examiner note that the modified-discrete cosine transforms and modified-discrete cosine transforms combine to form a single complex transform known as MCLT. Therefore it would have been obvious to one

of ordinary skill in the art at the time of the invention to modify Shur to include the use of

combining the modified-discrete cosine transforms and modified-discrete cosine

transforms in order to create a single complex transform, such that greater protection

may be provided over audio signals.

Regarding claim 6, Atlas discloses a plurality of randomly generated areas with

a subset of overlapping areas (page 5).

Regarding claim 7, Atlas discloses the mark components determines the mark

value of overlapping areas based, at least in part as a function of at least one selected

from the group consisting and signs (coefficients) associated with respective areas of

the subset (page 5).

Regarding claims 26-27, Shur discloses a system that facilitates watermarking media,

comprising; a mark generator component that utilizes, at least in part biased,

randomized statistics to determine at least one mark value for media (paragraph 0023,

0047-0050 and); and a mark embedding component that embeds the mark value into

the media (paragraph 0029, 0031 and 0044).

However Shur does not disclose overlapping areas with respective entry values

of a two-dimensional media form.

Atlas discloses overlapping areas with respective entry values of a two-

dimensional media form (see abstract; page 2-4). Therefore it would have been obvious

to one of ordinary skill in the art at the time of the invention to modify Shur to include the

use of overlapping areas with respective entry values of a two-dimensional media form,

such that the decoder can compare the marks in order determine if a watermark exist

for a user or not according to a set threshold.

6.   Claims 8-9 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Shur (US 2001/0049788 A1) in view of Tucker (US 2003/0028381 A1).

Regarding claim 8, Shur discloses all the limitations of claim8, except that a

noise mark generator component that embeds at least one independent noise mark

value over the mark value.

Tucker discloses a noise mark generator component that embeds at least one

independent noise mark value over the mark value (see abstract; para 0013-15 and

para. 0020-21; para. 0070). Therefore it would have been obvious to one of ordinary

skill in the art at the time of the invention to modify Shur to include the use of

embedding at least one independent noise mark value over the mark value in order to

hide the mark signal against intelligent extraction attacks, such the audio signal may be

protected against unauthorized parties.

Regarding claim 9, Tucker discloses the noise mark generator component and

the mark generator component respectively generate the noise mark value and the

mark value so as to be dedicated to a single entity (para. 0066; para. 0051-52).

Regarding claim 28, Tucker discloses computer readable medium having stored

thereon computer executable components of the system of claim 1 (para.0031-0032).

7.   Claims 16-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Shur (US 2001/0049788 A1) in view of Atlas ("Modulation Spectral Transforms

Application to Speech Separation and Modification, June 27, 2003) further in view of

Bradley (US 2002/0159614 A1).

Regarding claim 16, Shur discloses all the limitations of claim 16, except that

generating random areas with a subset of overlapping areas within a two dimensional

form of the media.

Atlas discloses a random area with a subset of overlapping areas within a two-

dimensional for of the media (see abstract; page 2-4). Therefore it would have been

obvious to one of ordinary skill in the art at the time of the invention to modify Shur to

include the use of overlapping areas with respective entry values of a two-dimensional

media form, such that the decoder can compare the marks in order determine if a

watermark exist for a user or not according to a set threshold.

However, Shur and Atlas discloses all the limitations of claim 16, except for

randomly assigning an entry value to each random area utilizing a user key, determining

the mark value at a particular location of the two-dimensional media form utilizing at

least one Bernoulli parameter derived from the random area entry.

Bradley discloses randomly assigning an entry value to each random area

utilizing a user key (para. 0030); determining the mark value at a particular location of

the two-dimensional media utilizing at least on Bernoulli parameter from the random

area entry values (para. 0030, 0034 and 0037). Therefore it would have been obvious to

one of ordinary skill in the art at the time of the invention to modify Shur and Atlas to

include the use of determining a watermark location on a two dimensional media

utilizing the Bernoulli parameter in order to obtain a soft estimate of the corresponding

bit, as the Bernoulli parameter only provides two outcomes (success or failure).

Regarding claim 17, Atlas discloses the two-dimensional from of the media

comprising a form generated by a short-time Fourier transform method to a domain

audio signal (page 2-5).

Regarding claim 18, Atlas discloses the short-time Fourier transform comprising

a modulated complex lapped transformation method (page 5).

Regarding claim 19, Bradley discloses determining the mark value further

comprising: determining a number of random access containing the particular location

(para. 0034); determining a number of random areas containing the particular location

with a first particular entry characteristics, determining a number of random areas

containing the particular location with a second particular entry characteristics are

intrinsic property of the claim invention as determining entry characteristics is the

function of all decoders in order to render the hidden data (para.0004); calculation a

Bernoulli parameter based at least in part of on the first and second particular entry

characteristics and a bias value (para. 30-38).

Regarding claim 20, Bradley discloses he method of claim 19, the Bernoulli

parameter calculated utilizing at least one equation selected from the group consisting

of: (a) A=B, p(i,j)=drawn uniformly from (1-p,p); 4 (b) A > B , then p (i , j) = p (A +

bias) + (1 - p) B A + bias + B (Eq . 1) (c) A < B , then p (i , j) = p A + (1 - p) (B

+ bias) A + bias + B (Eq . 2) were A denotes a number of random areas possessing

the first particular entry characteristic, B denotes a number of random areas

possessing the second particular entry characteristic, p denotes a predetermined

probability variable, bias denotes the bias value, and p(i,j) denotes the Bernoulli

parameter for location (i,j) within the two-dimensional form of the media (para. 0018,

30, 34 and 38).

Regarding claim 22, the limitation of detecting at least one embedded mark

utilizing statistic based on a mean of each previously determined random area and

user key derived from entry values of the random areas; and determining user-specific

data derived from the embedded mark is an intrinsic property of the claim invention as

the decoder can only the decode content in the reverse order of which it was encoded.

In addition determining where decryption code is located is the primary function of a

decoder.

8.   **Claim 23**, is rejected under 35 U.S.C. 103(a) as being unpatentable over Shur

(US 2001/0049788 A1) in view of Atlas ("Modulation Spectral Transforms Application to

Speech Separation and Modification, June 27, 2003) in view of Bradley (US

2002/0159614 A1) further in view of Kunisa (US 2004/0101160 A1).

Regarding claim 23, Shur discloses all the limitations of claim 23, except that

detecting the embedding mark comprising: decoding a first embedded mark value

while treating a second embedded mark as interference decoding the second

embedded mark while treating the first embedded mark as interference; and declaring

a particular user mark exist when statistics indicate a value greater than a

predetermined threshold value.

Kunisa discloses detecting the embedding mark comprising: decoding a first

embedded mark value while treating a second embedded mark as interference (para.

0182, 0203 and 0221); decoding the second embedded mark while treating the first

embedded mark as interference (para. 0182, 0203 and 0221); and declaring a

particular user mark exist when statistics indicate a value greater than a predetermined

threshold value (para. 0204, 0207).

Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to modify Shur, Atlas and Bradley to include the use of decoding two

mark wherein each one of the mark treat each other as interference, such that the

detection accuracy of the watermarks can gradually improved.

9.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shur

(US 2001/0049788 A1) in view of White (2003/0009669 A1).

Regarding claim 21, Shur discloses all the limitations of claim 21, except that

the method of claim 15, further comprising: generating a first mark value for a particular

location in the media utilizing a first user key for a user; generating a second mark

value for the particular location in the media utilizing a second user key for the same

user; and utilizing the combined first and second mark values as the embedded mark

value for the particular location in the media.

White discloses generating a first mark value for a particular location in the media

utilizing a first user key for a user; generating a second mark value for the particular

location in the media utilizing a second user key for the same user; and utilizing the

combined first and second mark values as the embedded mark value for the particular

location in the media (para. 0008).

Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to modify Shur to include the use of encoding two mark in a particular

location in order to uniquely identifying the user of the content, such that the owner of

the content can track and prevent unauthorized copy or distribution of content.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Esteve Mede whose telephone number is 571-270-

1594. The examiner can normally be reached on Monday thru Friday, 8:30-5:00 PM,

EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Esteve Mede

EM
September 11, 2007

EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER